Autonomous VTOL Scalable Logistics Architecture
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Sikorsky Aircraft Corporation (SAC) proposes to conduct a feasibility study for the creation of a new, fully autonomous, regional logistics architecture using VTOL aircraft to supplement existing transport vehicles. This study will focus on the northeast corridor of the United States from Washington D.C. to Boston and a regional military operation. The creation of a fully autonomous VTOL logistics architecture will revolutionize the way cargo is handled and shipped. Many of the enabling technologies will have major impacts on scientific research (increasing the capabilities of unmanned explorers) and passenger travel (altering air traffic management and reducing cargo flights into already crowded urban airports). Scalability issues will also be examined to determine the applicability of the architecture to national and international scale operations.

The proposed feasibility study will examine the tradeoffs between using a large number of small, limited capability aircraft and using a small number of larger, more capable aircraft. Cargo handling and shipping at the local and system levels will be analyzed to answer the key questions of how individual parcels should be handled? What is the ideal transition point between ground and air transport modes? What are the economic drivers of a VTOL logistics system? What vehicle capabilities and system architectures can fulfill the needs of the system cheaply and with minimal chance of interruption? What are the critical path, enabling technologies?

SAC has experience in many of the technologies required to realize a fully autonomous VTOL scalable logistics architecture. This experience will be used to better understand the additional technology developments and systems integration work that must be done to create the envisioned architecture.

This proposal describes the tasks to be accomplished during the first phase of this program and gives a brief introduction to the additional tasks that would be part of a second phase.